KATATONIA.

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THE present form of insanity was first demarcated by Kahlbaum [1] in 1874, and his results were confirmed by the researches of Kiernan,[2] who was the first American to recognize the affection. Observations were subsequently published by Brosius,[3] Hecker,[4] Schüle,[5] Arndt,[6] Hammond,[7] Spitzka,[8] Hardy,[9] Clevenger,[10] and C. K. Mills,[17] which still further supported the Prussian alienist's position. Cases clinically meriting demarcation under this group have been reported by the author of "Sketches in Bedlam," by Krafft-Ebing, Sankey, Culléré, Legardelle, and Adam. Kiernan states that "the first symptom like that noticed in the inception of most other psychoses is a change in the temper of the individual. Katatonia presents at times well-marked motions of rhythmical character, always under the control of the will. In this respect, these, while bearing some resemblance to, are very distinct from, those of chorea. Another characteristic, but which is not noticeable unless the case be observed from the inception to the close, is its cyclical character—maniacal, melancholic, and cataleptoidal conditions alternating with more or less perfect convulsive attacks; there are also pathetic delusions of grandeur, and a tendency to act and talk theatrically. Erotic manifestations of some kind frequently occur, and, as is usual under such circumstances, the patient's ideas have a religious tinge. At any stage, as in other nervous diseases, remissions, or, as is claimed by Kahlbaum, complete recovery, may occur. If

the case is to end unfavorably, periods of excitement and stupidity recur with more and more frequency, and the patient dies with terminal dementia."

As a means of comparison, I cite two of Kiernan's cases. T. R., age thirty-six, policeman, single, common-school education, intemperate, as were also his parents. The patient had been a masturbator, and had indulged in sexual excess. He was at first melancholic, subsequently maniacal, but recovering therefrom, became what his fellow-policemen called "stuck up." His temper changed from good-humor to irascibility, and asylum treatment was at length rendered necessary. He was admitted to the New York City Asylum for the Insane March 17, 1873. A week previous he had gone to church, but soon returned, saying he had been followed by "droves" of dogs. He was a tall, powerful, good-humored man, and, though he asserted he would not commit suicide, he had cut off the tip of his ear in an attempt of this kind. He was somewhat subdued in manner, and had had hallucinations of sight and hearing. The day previous to admission, he was affected with a spasm of the muscles of the extremities. Five days after admission, he manifested delusion that he had committed a great crime, and refused food, but said: "This is not a penance for the crime." He required artificial feeding for three days, took food voluntarily on the fourth, and again refused it on the fifth day. A period of excitement then occurred, and he became the subject of hallucinations, differing from those he had on admission. After treatment a short time with opium and hyoscyamus, he grew quiet and took food voluntarily, but very suspiciously. In about a week after, a spasm of the muscles of the neck, followed by slight unconsciousness and slumber, occurred, the pupils dilating widely, and so remaining for a few days. Two weeks after, he had very sluggish movements of the lower extremities, bearing a suspicious resemblance to functional paraplegia, but this was really an incomplete cataleptoid condition, involving also the muscles of the neck and upper extremities.

The patient opened his mouth, and performed other simple actions of that nature; these, however, were not

ideational, but sensory-motor acts, as his attention to the subject was nil, and he was in a peculiar emotional state. That all the mental faculties were not in abeyance, was shown by the fact that he involuntarily raised his hands in an attitude of supplication, or as an acknowledgment of a favor just received. His pupils responded to light, and the organic functions were performed as usual. This condition continued for three days with very little change, except that when asked to perform a simple action the request would be obeyed, and the action continued indefinitely in an automatic way.

Five days after the beginning of the condition just mentioned, the patient had a rapid, feeble pulse, the beats of which ran into each other and did not correspond with the heart's action, which, though rapid, was otherwise normal. His eyelids and lower extremities soon became œdematous, and the cataleptoid condition disappeared. The heart's action grew more irregular, *the first sound alone being audible*, and accompanied with a *loud, blowing murmur* heard at the base. Pulse 132 and more rapid in the neck than at the wrist; respirations were increased, the lungs and temperature being normal. The heart's action soon returned to its normal condition, and the murmur disappeared. The treatment was directed to the alimentary canal only.

The patient then became entirely unconscious as to his surroundings, though taking food and performing other actions involving only the organic functions normally, and so continued for about a week. He then began to have tonic contraction of the muscular system, followed by lessening of the œdema, which finally disappeared. The cataleptoid condition then returned, and was accompanied by considerable waxy mobility. Two days after, his muscles were extremely rigid, and he remained apparently unconscious for some time. One morning he suddenly spoke, and on being asked his reason for not speaking before, said: "They told me not to." On being asked who told him not to, replied "God and others," and began to weep. The fol lowing day he had a return of the cataleptoid condition, in-

which he remained for some time. These alternations continued for three months, when he became suddenly violent, tore off a bar from the window, and tried to make his escape. The excitement continued three days, the patient then passing again into the cataleptoid condition, and very formal in conversation. This manner of speaking and acting continued for three months. He then had another cataleptoid relapse, succeeded by an attack of melancholia attonita. Then followed a condition during which his pupils at first contracted and then dilated, his left arm contracted firmly, and from it a quivering motion extended over the left side, and gradually involved the entire body. The irregularities of circulation formerly observed once more appeared, and as before went away without special treatment. Melancholia attonita became the predominant condition, accompanied, however, by increased susceptibility to external influences. This remained four months, and was followed by a cataleptoid condition with much waxy mobility. While in this state he was found to be developing phthisis. The disease ran a rapid, somewhat irregular course, terminating life, twenty-six months after his admission to the institution.

The second case is as follows: W. H. G., aged twenty-six; colored, laborer, married, intemperate, and syphilitic. Mother had been insane, but recovered. The patient one day while at work fell down suddenly, and his face and arms began to twich; from this he soon recovered, but in two months became much depressed, and was placed in the City Lunatic Asylum, where he soon became maniacal and violent, which condition was followed by a period of depression with hallucinations. He suddenly refused to eat, and soon after passed into a cataleptoid condition, from which he emerged one morning; said he "was equal to any white man," and spoke very precisely. He was afterwards taken out of the asylum by his wife, and two months thereafter was readmitted, and after having remained two months was discharged improved. He was readmitted during 1874, then in a condition of melancholia attonita, out of which he gradually passed. When speaking he always

observed great precision, and if he supposed the expression used was not correct, would alter it until he found one that might with propriety be substituted for it. He remained in this condition till July of that year, and was again discharged. He was readmitted March, 1875. Held his head up in a very consequential way, and prefaced every reply to a question by the phrase, "I-do-not-doubt-but-what." "What is your name?" "I-do-not-doubt-but-what-it-is-William-Henry-G." How old are you? "I-do-not-doubt-but-what-I-was-born-in-the-year-1838,-so-my-mother-said." Where were you born? "I-do-not-doubt-but-that-I-was-born-in-some-part-of-the-world." What part? "I-do-not-doubt-but-what-I-do-not-know-what-part." His memory was somewhat deficient but not materially so, as he remembered when he was there before, that he went out on a furlough, and the physician's name. He was well-built and comparatively strong, and while speaking wrinkled his face very much; this was somewhat of a sensori-motor act, and under the stimulus of some emotion, at variance with his "verbigeration," disappeared. Patient retained his peculiar manner of speaking and acting, but grew less inclined to walk about, would remain for hours in an upright position, staring straight ahead at vacancy. He manifested moderate erotic desires.

My own case, the report and treatment of which are biased by the view that the motor symptoms were tetanoid, is as follows:

F. B., a German, aged thirty, married, shoemaker, was admitted into Cook County Hospital, May, 1880. The patient arrived in United States nine days ago; habits, moral and temperate. No trace of venereal disease; was never ill until the present attack. On arriving in America, not obtaining work at once, he became despondent and melancholic. Three days ago found him incoherent, excitable. He gradually grew worse until he had been in the hospital some six hours, during which time he had not slept any. The day previous to admission he began to have spasms and paroxysms at intervals.

On Admission.—While the hospital employees were at the wagon to receive him, he appeared rational and quiet, when suddenly his body became rigid; opisthotonos and episthotonos, also; he began to cry and bark like a coyote. These symptoms continued at short intervals, then would relax into somewhat quiet and

atonic spasms of respiration, when he would fill the intervals between the opisthotonos with cries and barks in the above-mentioned manner, sometimes changing his cries into a very high-pitched key and occasionally a rapid succession of snorting respiration (160 per min.); pupils natural and sensible to light; P. 128°; T. 102 (in rectum, he having trismus); resp. very fluctuating. On questioning his friends they said he was able to walk six hours before admission, and that during his illness he had not had a chill. May 4th.—*Treatment.*—At 5:50 P.M., he was given ten minims of tincture of physostigma every half hour hypodermically, also chloral hydrate, gr. v., administered in the same manner, but as often as found to be needed; and during the succeeding hour he had been given gr. xv. chloral hydrate and 3 ss. tincture physostigma; still boisterous. At 6:55, administered gr. v. chloral and ℥. x. tinct. physostigma. At 7:10.—P. 132, spasms of opisthotonos lasting forty seconds at intervals of one minute; spasms 25 seconds, intervals 25 seconds. At 7:15—administered gr. v. chloral and ℥. x. tr. physostigma, and repeated at 7:35. At 8:30—T. 102° (rectum-trismus) gr. v. chloral. At 9—P. 108; resp. 20; slept a few moments; no opisthotonos; lies on his back quietly. At 9:30—P. 106; answers yes to a question, the first sensible word; just had 15 minutes natural sleep. 10—He got up from his bed, walked some 20 feet towards the door, when he turned his head half way to the right; trismus as well as rigidity of the whole body took place; after remaining in that position for 40 seconds he was removed to bed, by main strength, and several spasms of marked opisthotonos followed in quick succession; he was given gr. v. chloral. 10:30—Makes night hideous by his howling; gr. v. chloral. 10:45—P. 136; T. 103½° (rectum); perspires profusely; spasms every other minute; gr. v. chloral; howling. 11:15—gr. v. chloral. 11:30—P. 102; pupils contracted; quiet; rests; pupils slightly dilated; drank cup of water. 11:44—Drank another cup of water; stood erect and micturated; urine high-colored; drank more water.

May 5th.—12:40 A.M.—P. 100; resp. 26; has been sleeping quietly for past 20 minutes; pupils small and respondent to light; lifting the lids does not wake him; sleeping.

Temp. in axilla, 100; sleeping well; no chloral since 11:15.

At 1:10 A.M.—He now wakes up with a "Ha! ha! ha!" and asks for a cup of water. Throws his head from side to side; body quiet, hands and arms straight by his side, and muscles rigid. No opisthotonos. Snorts and howls. Rapid resp. Now holds his head still and rolls his eyes. Injected chloral hyd. gr. xi.–v. in one arm, and remainder in the other. At 4:30 A.M.—Slight opisthotonos. 4:35.—Marked opisthotonos. 4:40.—Quiet, slight trismus, sleeps a little every two or three minutes. Turns his head quickly right to left. Snorts occasionally. Pupils respond markedly to light. At 4:55 A.M.—Cries and whines faintly, sleeps. At 4:57 A.M.—Marked opisthotonos; chloral, gr. 7½. At 5:05 A.M.—Same condition, same treatment. At 5:08 A.M.—Gave

him ʒ i. kali brom. Arms have been rigid at his sides and motionless for hours. At 5:15 A.M.—Opisthotonos as frequent, but not as marked. Trismus, howling, and clonic spasms of face continue. At 5:25 A.M.—Rectal injection of chloral hyd. ʒ ss., kali brom. ℈iv., aquæ ℥ iiss. Still howls, opisthotonos less frequent and less marked. At 5:55 A.M.—Still howls. Pupils equally dilated and respondent to light. Places his left hand on his chest, but immediately replaces it at his side, this being the only movement of the extremities for many hours. Occasional pleurosthotonos. At 6 A.M.—A large portion of the last rectal injection has just passed into the bed. Now holds his arms upwards, and gradually, very slowly, raises his body, until he is in a sitting posture; then returns in the same manner. This he repeats. Next holds his hands together, directly upwards, with eyes intently fixed upon the ceiling, as though in prayer; remains in this attitude for four minutes, then sits up as before. Now kicks the bed-clothes off, lies naked three minutes, turns on his side, falls asleep.

At 6:20 A.M.—P. 112. T. at axilla 100½°. Resp. 32. Still sleeping. Wakes up and asks for water.

At 6:30 A.M. injected per rectum, kal. bro., ʒ i., aquæ, ℥ iii., and applied pad and bandage to retain the injection. Slight opisthotonos; howls, cries, and laughs a little; is becoming more quiet; moves hand slightly; mutters and whines. At 7 A.M., sleeps quietly now. At 8:05 A.M., injected gr. 7½ chloral, hypodermically. At 8:50 A.M., trismus continues; injected kali bromid. ʒ i. in rectum and retained as before. At 9:05, more quiet; sleeps at intervals. At 9:15, is now sleeping soundly. At 9:40, P. 112, T. 99½°, resp. 28; moves in his sleep; fearing opisthotonos, injected ʒ ss. chloral; gets up out of bed and walks about his room with staggering gait; micturated; urine normal but high-colored: returns to bed; no trismus; opisthotonos mild; rests quietly and breathes easy. At 10:50 A.M., P. 98, skin cool; sleeps. At 1:10 P.M., just awoke; moves about quietly in bed. At 6:40 P.M., has been moving about in bed and room since 1:30 P. M., and howling in the meantime. At 6:55 P. M., injected gr. 7½ chloral, hypodermically; no opisthotonos; clonic movements of face; trismus; snorts, laughs, groans, and barks. At 11:35 P.M., turns his eyes from side to side, and will imitate any sound he hears.

May 6th.—At 1 A.M., just awoke; quite restless; had been sleeping a few minutes; gave gr. 7½ chloral as before. At 2 A.M., has talked for the past hour; breathing natural, then irregularly for about ten minutes, and finally goes to sleep in two minutes after an injection of gr. 7½ chloral. At 5 A.M., has slept and rested well for nearly three hours; he now wakens, grating his teeth, howling, snorting, and crying; gave gr. 7½ chloral hypodermically. At 7:30 A.M., injection repeated. At 2 P.M., has drank little and eaten nothing for the past two days; gave O ss. milk per stomach-pump; owing to trismus find great difficulty in

getting tube of pump into the mouth. At 7 A.M., P. 124, T. per rectum 103°, resp. 32 ; gave O i. milk in same manner as before ; falls asleep normally. At 10:40 A.M., gave O ii. milk in same manner as before ; rests well.

May 7th.—At 3 A.M., P. 116, T. per rectum 102°, resp. 28 ; he seems now to rest quietly but wakeful ; groans a little. At 3:30 P.M., P. 132, T. 102°, resp. 20 ; gave him ℥ ii. milk per rectum, also O ii. by stomach pump ; rests well.

May 8th.—At 8 A.M., pulse 104, temp. 101° ; shakes his head from side to side ; nods sometimes ; trismus ; talks if any one is near him. At 3 P.M., P. 104, T. 99°, resp. 20. At 7 P.M. T. 100° ; rational ; talks German ; quiet ; says that he wants water, then asks for milk, of which he drank one pint, but vomited some of it.

May 9th.—Does not talk any more ; gets up and defecates ; utters unarticulated sounds ; T. 100° ; whistles at times ; has cataleptoid symptoms ; he will retain his extremities in any position they are placed for two to three hours ; he will then get upon his knees, and with clasped hands for two to three minutes look upwards as if in prayer.

May 10th.—Is in the same condition.

May 11th.—About 2 A.M., P. 110, T. 99.5° ; walks about his room ; sits at table to eat, covers his face with his hands, and cries frequently ; goes to bed and howls ; is rational at short intervals.

For the next three days he remains in the same condition.

May 15th.—Patient taken home by his friends ; eats well ; has more strength. He now claims that he is a sailor. Departs peacefully.

May 19th.—He is brought back to the hospital on a bed by his friends. They put him on his feet, thrust him into the corridor (against the warden's orders), and then drove away. He now assumes the rôle of a soldier—standing perfectly erect, with hands at his sides and eyes front. On the motion being made for him to follow his friends and their wagon, he marches after them, and when they motion him back, he stops short, turns about face, as if he were on dress parade. These actions he repeats several times. Finally he was taken to the examining room, but resisted all attempts at examination ; would not allow any physician to approach him. Ultimately he had to be held by force, howling loud and long about the same as when he left the hospital, but weaker. P. 108, T. 99.4°, resp. 20. Was placed in his old quarters ; occupied most of his time in prayer ; at bedtime he threw the bedding about his room ; prays most of the time in German ; but, although he cannot speak English, he sometimes repeats the Lord's Prayer in that language plainly ; slept on the wire mattress all night ; in the morning he ate a good breakfast of oatmeal and milk.

May 20th.—He was taken to the insane court, and at court hour was with difficulty removed from the wagon, struggling much

at times, then making his body rigid. He was eventually committed to the Cook County Hospital for Insane, where he died about a year after ; but there is no history of his condition while there.

Ætiology.—Kiernan [12] is of opinion that the characteristic pathological condition is an inertia of the vaso-motor centres, whose consecutive injurious effects were concentrated on the parts lying at the depths of and around the fissure of Sylvius, and that any influence tending to cause such inertia will produce katatonia. He is also of opinion that scrofulous conditions are often associated with katatonia. Clevenger [14] expresses the opinion that "katatonia seems allied ætiologically to some rheumatoid disease though its origin may be in nerves or blood." One case cited by Kiernan [13] under insanity due to rheumatism at first sight seems to bear out this opinion.

CASE I.—J. G. Ger., æt. fifty, was admitted to the N. Y. City Asylum in a violent excited condition. The patient's wife gave the following history : The patient's father and grandfather died during an epileptic attack, and the patient's eldest brother is an epileptic. The patient has been perfectly well up to three weeks before admission, when he was attacked by acute articular rheumatism. The swelling of the joints was at times extreme, but after a month's duration suddenly disappeared, to be followed by a change to the mental condition in which the patient was admitted. The patient continued excited and violent, the violence being rather of the nature of melancholic frenzy. There were marked hallucinations present of a very distressing character. The patient continued excited for about three weeks after admission, when he suddenly passed into a cataleptoid condition with great waxy flexibility. In this state he remained for three years, when his pupils became unequal, his tongue tremulous, and an expression of content pervaded his face. He did not, however, speak until about three months had elapsed, when he talked loudly about his wealth in Germany ; his speech was hesitant, and he had a great tendency to omit words. He passed through the usual stages of parei dementia, dying a year after the appearance of the paretic symptoms. No autopsy was obtainable.

This case is far from being a typical one of katatonia, nor is it cited by Kiernan as such, and while it shows that rheumatism, or the nervous condition to which rheumatism is due, may produce katatonic symptoms, the usual outcome of such cases is in other directions, and does not

demonstrate any analogy, nor more than the fact that rheumatism may cause vaso-motor inertia. Careful analysis of the cases already reported by the observers cited tends to bear out Kiernan's opinion.

Treatment.—Kiernan[12] says: "The medical treatment should be in a great measure regulated by the symptoms and should be of a tonic character, as the katatoniac is always more or less debilitated. The motor disturbance points to the use of conium. Alcoholic stimulants have had at times what could be nothing less than a food value, and have aided in sustaining the diminishing vitality of the patient. Stimulant enemata have been occasionally of service, and frequently prevented the return of a cataleptoid condition. The vaso-motor anomalies seem to indicate the use of nitrite of amyl and glonoine. He is satisfied that amyl nitrite is of value. Ten cases have certainly improved under its use, and it has caused a pleasurable feeling in all cases of katatonia where it has been given. Moral treatment, of course, in a great measure, revolves itself into the consideration of the question of asylum treatment. This is of advantage, as it affords a means of isolation from friends, always the most disturbing influence in treatment. Change of scene, and travel, under charge of a sensible educated man, not a pedant, would benefit many, as it would enlarge the patient's ideas and stimulate him to a healthy tone of mind—in short, stir him up. If the case be a boy, and he has a doting, foolish mother, removal from her should be the first step in the treatment, as her sympathy would undo all otherwise beneficial measures; a remark that applies with equal, if not greater, force in the case of a wife and husband. Balls and entertainments of a purely sensuous nature should be avoided, and all things of an intellectually stimulating nature brought as much as possible in contact with the patient. Faradization of the muscles of the chest, as a prophylactic against tubercle, is one means of treating probable somatic complications to be recommended. The general treatment by tonics, etc., is of course indicated in this and all other atonic physical conditions occurring during an attack of insanity. The preferable method of arti-

ficial feeding often required in cases of katatonia, is by means of a Davidson's syringe, the use of which is unattended with the danger that accompanies the use of the elastic but stiff tube of a stomach-pump, or the misadventures that follow the clumsy funnel method of feeding."

Spitzka expresses very similar opinions as to treatment. Hammond concurs in Kiernan's view of the pathology and hence in the treatment, but lays great stress on the use of sodium bromide.

Frequency.—Kiernan [11] has found that two per cent. of the insane admitted to the New York City Asylum for the Insane were victims of this psychosis. Clevenger [15] found that one and a half per cent. of the patients under treatment at the Cook County Hospital for the Insane were katatoniacs.

Medico-Legal Relations.—As has been pointed out by Kiernan: [12] "From the irregularity of the symptoms, which set at defiance the dicta of the forensic alienist, it would seem as if the disease could be easily feigned. Apart, however, from the improbability of a criminal being so keen an observer as to attempt feigning so complicated an affection, one symptom could scarcely be feigned with even the slightest probability of success, namely: the cataleptoid condition. The failure in the simulation of this symptom, with a close examination of his antecedent history, would soon detect any attempt of this kind. The crimes that a katatoniac would be likely to commit are murder, arson, and rape—the murder in obedience to an hallucination, the arson for a similar cause, while the rape would be an expression of his excited erotic condition. If these crimes, however, were committed during a remission, the patient should be held responsible, as he would, for the time being, be capable of acting logically on any conclusion arrived at in a logical manner. An instance where katatonia has been brought under cognizance of law occurred in a fanatical religious organization in Germany. Two ministers of this organization believed they had received, during a cataleptoid condition, a command from God to kill a certain man and raise him from the dead. The former they succeeded in doing, but in the latter they failed. In this case, which illustrates the circumstances

under which crime might be committed by a katatoniac, the accused were declared irresponsible. Any person, however, who has been acquitted on these grounds should be immediately sequestrated for the safety of the public."

Pathology and Pathological Anatomy.—I have already given Kiernan's view of the pathology of the disease, which is that adopted by the majority of authorities. Meynert [16] has said: "Katatonia is characterized by a series of fluxionary excitations, toned down by co-existent cerebral pressure, microscopic exudations, ventricular dropsy, and (perhaps) premature ossification of the sutures. From these would result forced and theatrical activities on the part of the patient. The convulsive state indicates the control of the irritative factors; the cataleptoid condition, the triumph of the depressing factors. The ideas of grandeur following close upon stupor, are the results of ideas previously caused by fluxionary conditions."

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